

Rural transport in India

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The paper emphasizes the role of rural roads and rural transport in the country's development. Drawing on the experience of Kerala it explains how attention to these two matters could improve economic conditions in rural India and reduce migration to cities.

THE importance of rural transport to economic and social development is obvious. Three fourths of India's population of 960 million, i.e. 720 million, live in six lakh villages, which vary in population between 800 and 5000 (ref. 1). Though migration to towns is reducing the percentage of rural population, in absolute numbers the rural population is increasing. For instance, during the decade 1981-91, rural population has increased by 100 million. Bulk of the 300 million people below the poverty line and the 30 million handicapped are in rural areas. 50% of the rural population are illiterate. At least 50% does not have access to clean drinking water, schools and primary health care facilities. Adequate rural road transport will improve these conditions.

Such a dismal state of affairs continues even after massive governmental investment for rural development, poverty alleviation and employment generation. Only 15% of Rs 20,000 crores of annual subsidies and grants, under various schemes, has reached the beneficiaries. Increasing allocation for rural development in successive Five Year Plans has not improved the situation. Only an efficient Rural Transport (RT) system can allow people to take advantage of massive investment envisaged for rural development.

Lack of infrastructure

It is well known that development is dependent on appropriate and adequate infrastructure, such as power, transport, communication, water and irrigation. Also, essential services, such as educational institutions, health care facilities, rural banks and co-operatives, markets, development boards, etc. are essential for balanced development. Rural development did not make much progress due to lack of such inputs.

Rural transport - Low priority

If a proper RT system had been provided, it would have functioned as a catalyst, facilitator and efficient instru-

ment for accelerating rural development and bringing about social equity. But RT is now far behind requirements, and therefore, is unable to play this vital role. According to the National Transport Policy Committee (NTPC), Fair Weather Roads (FWR) connected only 55% of villages. In order to cover all the villages by All Weather Roads (AWR), investment required may be of the order of Rs 30,000 crores, which is beyond the scope of the existing priorities of the government for investment. Transport itself has been given very low priority by the government; and RT still less. AWRs will bring in connectivity and mobility.

India's large area size and population, the scattered nature and small size of village settlements, poverty and illiteracy of rural people and low level of commercial activity do not provide sufficient incentive and economic justification for large investments in RT.

The deplorable condition of all categories of India's roads is well known too. Experts have estimated that the country loses thousands of crores by way of wastage of petroleum, damage to vehicles, accidents, delays, etc. Road accidents are more in India than in USA, though the latter has 100 times the number of vehicles. Solution lies in privatization of RT system and road laying and maintenance.

Kerala's example

Passenger road transport was nationalized long ago in the name of socialism. State Road Transport Undertakings (STUs) have been unable to meet rural requirements, particularly of RT. Most STUs are operated inefficiently, and also incur huge losses. In Kerala, private buses are operating very efficiently, connecting every village. Kerala has 34,000 buses, of which only 2000 are of the STU, which shows the importance given by government to private road transport. Kerala has shown how rural people can enjoy most of the facilities and amenities which the small towns possess. Kerala's villages have 10 to 15 taxis and an equal number of three wheelers, since rural roads are fit for motorized transport. Kerala's high standard of living is partly due to better roads and connectivity.

Kerala has demonstrated the concept of having excellent road transport and communication systems. All villages are connected by AWR or FWR. With such a high

degree of connectivity, people live in their village homes and commute to nearby towns for work. They even travel, by buses/trains, for two hours either way, as they have the advantage of a congenial village life, without the ill effects of living in urban areas, which is costly and undesirable from many points of view. Migration to towns is avoided. Villages retain their elite. Elsewhere, villages are denuded of enterprise. Kerala has few urban slums. The whole state is a vast network of villages and small towns.

Underdeveloped villages

Rural people migrate to urban areas for job opportunities. Government's efforts to induce doctors, teachers, administrators and other professionals to work in rural areas have failed. This is obviously because villages do not have basic facilities and amenities, such as markets, hospitals, schools and colleges, entertainment, clubs, workshops, places of worship, trained personnel, intellectual climate, etc. Companies do not wish to establish factories in rural areas, as they are unable to attract professionals and technicians to work there. All these handicaps and deficiencies can be remedied if an adequate and efficient RT system is operated.

Rural transport system and planning

RT is concerned with transporting goods and people within the village, between villages and urban areas, linking village roads with district roads, state highways and national highways. Rural Transport System (RTS) consists of roads and vehicles of various types and capacities, ownership and investment patterns, maintenance of roads and vehicles, taxation and government regulations, etc. The efficiency of RTS will depend upon the perspectives and priorities given by the government. RTS has to be integrated into regional planning and state plans. Policies regarding state vs. private in laying roads and operation of vehicles have to be changed in order to make progress.

The government has slowly, but very reluctantly, opened up road building for private participation, based on the concept of build, operate and transfer. But the progress is very slow. If the responsibility of laying the national and state highways as well as their maintenance is given to the private sector, government can divert available funds for district and village roads, in which the private sector may not be interested, as it would not be profitable for them. Also, it is not easy for the private sector to earn revenue through tolls in such roads. Incidentally, all buses in the village and district roads in Kerala are operated by small private operators, thus showing that RTS is profitable under conditions created

in Kerala. Equitable employment and operational efficiency become possible, since small operators work diligently, avoiding overheads.

While formulating the plan for 1981–2001, the NTPC noted² that funds allocated and utilized were far below minimum requirements. The Committee also stressed that road transport is a basic and vital infrastructure, which is a prerequisite, though not a guarantee, for economic growth.

NTPC also laid down that all villages, with population above 500, should be connected by AWRs by the turn of the century. They also pointed out that road construction programme will be a major sector for employment generation. In 1981, total road length was 1.5 million km, out of which 46% were surfaced roads. For the same period, road density in kilometres per 100 sq. km stood at 0.46, as against three for Japan. NTPC estimated that road length required by India by the turn of the century should be 2.6 million kilometres for an area of 3.28 million sq. km.

Studies by IIM and NCAER

The Indian Institute of Management at Bangalore³ and the National Council for Applied Economic Research at New Delhi conducted a survey of RT in 1978–79, with a major focus on bullock cart transport. IIM, Bangalore, followed it up with another study⁴ in 1989, and highlighted salient changes during the decade. They have estimated significant trends, comparing conditions in 1979 and 1989. Studies on freight movements conducted in 1989 showed that carts play a predominant role for movement within the village, while trucks and tractors dominate outflow.

There is substantial increase in outflows, as rural produce is being taken to more distant locations than in previous years. Large settlements have less number of carts, and more motorized vehicles. Trucks need AWR, while carts and tractors can use FWR. Per capita passenger trips increase with settlement size; so also bicycles. When more number of villages are connected by AWR, truck traffic increases rapidly.

Passenger transport is mainly by bicycles and motorized vans in FWRs, and buses of various sizes and capacities in AWRs. Three wheelers, scooters and motor cycles handle a small part. In states like Bihar, UP and MP, locally made improvised vehicles are operating, which are known by various names, e.g. jugis. Bullock carts are not used exclusively for passenger transport. Vans and trucks of various sizes and capacity are making rapid inroads, particularly in areas where there are FWRs. Where there are no motorable roads, carts still play an important role in freight movement.

Studies conducted by IIM, Bangalore show that percentage of passenger traffic in different modes – walk,

cycle, bus and others – in respect of settlements with less than 500 and over 5000 population is 63.5 and 25.8%, 18.1 and 20.9%, 17.7 and 52.2% and 0.7 and 1.1% respectively. Studies also show that more than 60% of passenger trips – by walk, bicycle or bus – are for agricultural operations, education and business, irrespective of the size of the settlement.

Animal-drawn carts

Though it would be desirable to connect all villages by AWRs, yet, under the present conditions, where 50% of villages are not connected by motorable roads, use of bullock carts is inevitable for many years. Out of 15 million carts, 12 million are estimated to be in rural areas, which may be transporting about six billion tonne km of freight per year. Camel carts operate in Rajasthan and Gujarat in both urban and rural sectors. In Haryana, Punjab and Western UP, buffaloes also are used for carting. Bullocks are becoming costly. A pair costs as much as Rs 10,000 to 15,000 in parts of Karnataka. Therefore, use of buffaloes and donkeys should be encouraged. Donkeys work as pack animals in Gujarat, Rajasthan and parts of Tamil Nadu. There is good scope for increasing the population of donkeys through a massive breeding programme and introducing donkey carts. At present, there is no organized effort for breeding work animals.

The number of carts have remained almost the same during the last two decades, estimated to be about 15 million in the whole country. In the early forties, a British engineer estimated that road damage then due to the iron rim fitted to wooden wheels was as much as Rs 50 crores per year. In current terms, the damage may be 300 to 500 crores of rupees per year. But even such heavy social cost has not prompted the government to popularize improved designs of carts with pneumatic tired wheels, which do not damage roads.

Improved carts

The Dunlop company was the pioneer (1950) in introducing pneumatic tired carts, fitted with smooth bearings, steel wheels and axles. These simple improvements increased the capacity from one to three tonnes, with less draught effort required from the animals. CARTMAN has been popularizing improved carts (ICs) for the last 20 years. ICs eliminate damage to roads, move faster and bring in increased income from higher carrying capacity. Further, animals need to exert less; and therefore can pull normal loads without goading and beatings, i.e. less suffering. Further, productive life of the animals increases. During the last three decades, ICs have become popular in semi-urban areas and for sugarcane transport. It has been estimated that one million

ICs are in operation now, plying mostly in Haryana and Punjab, Western UP, parts of Tamil Nadu, Pondicherry and most sugarcane-growing areas. Cost of an IC (Rs 10,000 to 15,000) would be about 50% more than a traditional wooden wheel cart. But an IC could carry three times more load.

Significant potential gain through improved RT and development can easily justify the funds required for popularizing improved carts. At present, most of the 12 million rural-based carts are used for transporting only personal goods to markets and to bring inputs for agriculture. In small villages, carts are used only for 50 days a year, while in large villages, with a population of two to three thousand, carts are used for 100 days a year.

Over the years, carts are increasingly being used more intensely and for more number of days per year. But progress has been very slow, except in Haryana, Punjab and Western UP, where most carts are ICs. But, there is good scope for introducing ICs in rural areas where commercialization is at the required level. Solution lies in giving ICs to farmers under various government schemes, such as IRDP, poverty alleviation, employment guarantee, SC/ST welfare, etc.

Use of motor vehicles

In the case of registered motor vehicles, data is available. But for carts and bicycles, there is no published information. Also, no reliable information is available regarding vehicle penetration into rural areas. Studies^{3,4} revealed the following:

- a) 50% of villages have a population less than 500.
- b) 60% of villages did not have access to AWR.
- c) Smaller the village, less the economic activity, and therefore, less the number of vehicles. Carts move only about 15% of the tonne km of goods while trucks carry much more, accounting for 83%.

RTS and urban development

Planning and development of cities has not made any impact. Cities have been growing in a chaotic way since Independence. Quality of life has deteriorated so much that some cities are no longer habitable. Pollution in Delhi and Bangalore is above the safety limits. Therefore, from the point of view of saving urban areas from further decay, migration to urban areas has to be slowed down, which means that quality of rural life has to be improved. One easy way to improve the quality of life in villages is to improve RTS, which will provide access to markets, facilitate social contacts, connect employment centres, etc.

Gandhiji had repeatedly pleaded for development of villages, which would concurrently reduce the current

mad rush to cities. Experience all over the world ought to teach us about the ill effects of unplanned urbanization and denuding villages of wealth, job opportunities and facilities. Unfortunately, life in the villages has not improved much and hence migration to towns and cities continues. Job opportunities, markets, education and health facilities, cultural activities, social amenities, etc. are required for retaining rural talent and also for attracting professionals from cities to work in rural areas. In spite of a lot of rhetoric on rural development and massive investment of Rs 30,000 crores per year directly and indirectly during last 50 years, rural development has been slow. A conceptual understanding of the factors affecting city vs village will reveal the importance of RT.

In villages, space is plenty and cheap. Air and water are much cleaner. But many other essential requirements are non-existent or are of poor quality. Towns and cities have these facilities and amenities. If villagers get access to these, rural people will not migrate to urban areas. Also, professionals would start working in villages.

The average size of a village settlement is only 1,000. Obviously, it is not possible to provide these facilities and amenities in every village or even in a cluster of villages. But it is possible to connect a cluster of 50 to 100 villages with AWRs and to provide a good road transport system for goods and passengers. Thus, a network of villages, with a population of half to one lakh, can be provided with all the facilities a modern town now has. According to experts, provision of all the necessities for making life comfortable and attractive to professionals would cost only 10% of what they would cost in a modern city. Every facility and amenity that exists in a city can be accessed with a good road network and transport system. Doctors, engineers, teachers, administrators and others would then be willing to work in such conditions. Volume of transactions and level of economic activities will be high enough for providing all these facilities and amenities on a self-sustaining basis, i.e. without subsidy. A critical size of population coverage will make a road transport system technically feasible, economically viable and ecologically desirable.

The only solution to remove poverty is to create employment, which can be increased through roads and road transport. Unfortunately, the government has not approached the problem from this point of view.

In the above concept, RTS should become an integral part of regional planning, which would connect towns, large villages with a population of 5,000 and all the surrounding villages with a population ranging from 500 to 5,000. RTS should be considered as the nerve system for such connectivity. Such regional planning ought to have been the main focus of development planning. But the

government undertook this work with official machinery, which is bureaucratic and non-professional. Most districts get about Rs 60 crores per year for spending in 300 development schemes. But RTS has not been given priority under these schemes.

Infrastructure development

After having neglected it since Independence, the government has at last woken up to the imperative need for improving infrastructure, such as power, transport, communication, etc. But there is no evidence of urgency in adopting liberal policies, which those would bring in the private sector to complement and supplement state effort. Discussions are centred around industry, ports, highways, etc. RT and rural infrastructure have not been given due importance. It may be recalled that the British put up 50,000 km of rail track, covering many towns, where there was no economic activity. The same concept should apply for RT. India should not wait for the demand to come first for justifying roads and road transport. It ought to be the other way round. Providing roads and road transport would spur economic activity. Roads and transport will then become economically viable for investment and operation. Thus RT is important from the overall development point of view. Such a macro vision has not been planned so far.

Conclusion

Though bullock carts play a significant role in RTS for freight transport, long term solution is FWR and AWR, which will enable motorized transport to penetrate into rural areas. Most state and private undertakings are using large size buses and they complain that load factor is low in rural transport. Smaller buses, of 12 to 25 capacity, is the solution. Planning of RTS has to be taken up for serious research, planning and resource allocation.

Gandhiji's dream of a prosperous rural India and the pledges given by successive leaders can be realized only if transport and communications are improved. Other physical and social infrastructure would follow automatically, paving the way for business and industry to thrive. With devolution of powers to zillas, taluks and villages, conditions may improve in the next few years.

1. Census of India, 1991.
2. *National Transport Policy Committee Report*, Government of India, 1980.
3. *Animal Cart in the Rural System - Part I* and the Main Report, Indian Institute of Management, Bangalore, 1978.
4. *Rural Transportation Study*, Indian Institute of Management, Bangalore, 1991.